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(54) Title: EXPRESSION OF HUMAN INTERFERON IN TRANSGENIC CHLOROPLASTS

(57) Abstract: A plastid transformation vector for a stably transforming a plastid genome is provided. The vector includes, as operably-linked components, a first flanking sequence, a DNA sequence coding for a therapeutic human IFN, which is capable of expression in the plastid and a second flanking sequence. The invention also provides isolated and purified IFN, wherein the IFN is configured in a monomeric or multimeric form and is a structural equivalent to orally administered human IFN. Also provided are methods for variable-expressing biopharmaceutical proteins in plants suitable for mammal consumption. The method includes integrating a plastid transformation vector into a plastid genome of a plant cell; growing the plant cell to express a biopharmaceutical protein, such as therapeutic human interferon IFN. Also disclosed are plants transformed with the aforementioned vectors, and the progeny thereof. Also, disclosed is the IFN, which is IFN $\alpha$ 2b.

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## A. CLASSIFICATION OF SUBJECT MATTER

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US CL : 800/278, 317.3; 435/320.1, 468; 514/3; 530/344

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## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 800/278, 317.3; 435/320.1, 468; 514/3; 530/344

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

STN, EAST: search terms: interferon, plastid, chloroplast

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, E	US 2003/0204864 A1 (DANIELL) 30 October 2003 (30.10.2003), pp. 21-22, paragraphs 0171-0174. p. 26, paragraphs 0212-0213, pp. 26-29, paragraphs 0219-0241.	1-53
A	US 6,512,162 B2 (MCBRIDE et al.) 28 January 2003 (28.01.2003).	1-53



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O" document referring to an oral disclosure, use, exhibition or other means		
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